

CHAPTER 24

In the past three chapters, you have looked at how you and other organisms can use their senses. Your sense organs are the places where each of these senses begins. But you have also learned that each of these senses must send a message to the brain! Let's take a look at these "messages" and how your brain can read them...

Think of your brain like a computer. You send it information and it sends information back. A computer can also do different things like tell a printer to print off a page or to use a telephone to call someone.

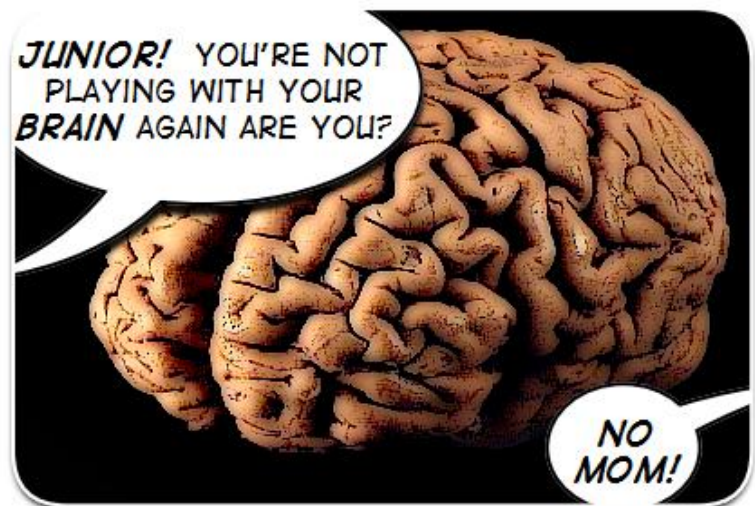
Your brain tells your body how to do things too...

Like taking a copy out of the printer and picking up the phone when it rings!

Your brain is divided into three parts:

Cerebrum, Cerebellum and the **Brainstem**

("suh-ree-brum") ("sarah-bell-um")



Your **cerebrum** is the largest part of your brain and it is split in half. Each half is called a **hemisphere** ("hem-is-fear"). Every cerebrum has a **right hemisphere** and a **left hemisphere** that are connected to each other. However, each of these hemispheres tells your body how to do different things. For example...

INSIDE YOUR
CEREBELLUM...



RIGHT FOOT,
LEFT FOOT,
RIGHT FOOT,
LEFT FOOT...

Your right hemisphere is in charge of your creative abilities: art, music, movement and dance are all controlled by your right hemisphere.

Your left hemisphere is in charge of your problem-solving abilities. Math, language and your ability to solve puzzles is done by your left hemisphere.

Both your left and right hemispheres are made up of four parts, called **lobes**:

Frontal Lobe this lobe controls your ability to speak, movement, emotions and problems solving

Parietal Lobe this lobe controls your feelings of pain, pressure, temperature, and touch

Occipital Lobe this lobe controls your sense of vision

Temporal Lobe this lobe controls your senses of hearing and smelling and the ability to understand speech

The second part of your brain, the **cerebellum** is much smaller than your cerebrum. Your cerebellum is what you use in order to run, skip, hit a baseball or jump rope. The cerebellum helps you to keep your balance. It also controls all of your **reflexes**.

YOU WILL NEVER FIND AN OCCIPITAL LOBE IN A PLANT.

OH YEAH?





IN A BIZARRE NEWS STORY, GRAVITY HAS BEEN BANNED FOR THE REST OF THE DAY. NO STRANGE REFLEXES ARE TO BE EXPECTED TODAY.

Reflexes are actions your body goes through without thinking about them. Blinking your eyes and raising your arm when something is thrown at you are reflexes!

You don't think about blinking every few seconds, do you? Of course not... it is your cerebellum that controls these reflexes!

The third part of your brain, the **brainstem**, can be found between your spine and the cerebrum. The brainstem controls your breathing, swallowing and digestion of food. The brainstem also controls how fast your heart beats and how it pumps blood through your body!

Your brain cannot work alone! It must have a way to get the messages from your sensory organs. It also must have a way to send a message to your body to run, jump, and pick up the phone or any other action you have to do!

Your brain gets help from other parts of your body. One of them is your spinal cord. Your spinal cord is attached to your brain stem and is found **inside** that long stack of bones known as your backbone. Your backbone is also called your **spine**.

Whenever you take a bite of chocolate cake, your taste buds send messages to your spinal cord through the use of nerves. **Nerves** are small fibers (like a string) that act like telephone lines in your body. Nerves send messages from your sense organs to your spinal cord. The spinal cord then sends the message to your brain.

Your brain reads the message and decides what the body should do. It then sends a new message to your spinal cord. The spinal cord then sends the message through nerves to your body. Once your body gets the message, it begins to move. In the case of the chocolate cake, your brain is telling your mouth **to keep chewing!**

So far, you have been looking at the organs that help you sense the world around you. In the next unit, you will be looking at many of the other organs that keep your body alive!

The table below contains words and phrases that have been chopped in half. Find the pieces that fit together and write them in the answer area below.

brai	al lobe	nstem	ves
Ner	al lobe	cere	lo
ellum	occipit	misphere	exes
pariet	spina	l lobe	left he
tempor	Cereb	brum	refl
l cord	ine	fronta	right he
al lobe	bes	sp	misphere

Answers:

- | | |
|----------|-----------|
| 1. _____ | 9. _____ |
| 2. _____ | 10. _____ |
| 3. _____ | 11. _____ |
| 4. _____ | 12. _____ |
| 5. _____ | 13. _____ |
| 6. _____ | 14. _____ |
| 7. _____ | |
| 8. _____ | |

Match the words in the first column to the best available answer in the second column.

- | | |
|------------------------|-------------------------------------------------------------------------------------------------|
| _____ Cerebrum | 1) one half of your brain that takes care of your problem-solving abilities |
| _____ Right hemisphere | 2) parts of the hemispheres of your brain |
| _____ Left hemisphere | 3) long stack of bones that protect your spinal cord |
| _____ Lobes | 4) this lobe controls your senses of hearing and smelling and your ability to understand speech |
| _____ Frontal lobe | 5) smaller than the cerebrum; helps you to keep your balance and controls all of your reflexes |
| _____ Parietal lobe | 6) this lobe controls your sense of vision |
| _____ Occipital lobe | 7) this lobe controls your feelings of pain/pressure/temperature and touch |

- _____ Temporal lobe 8) this lobe controls your ability to speak, move and problem solve.
- _____ Cerebellum 9) actions your body goes through without thinking about them
- _____ Reflexes 10) found between your spine and the cerebrum; this part of your brain helps you to breath/swallow/digest food and also controls how fast your heart beats and how it pumps blood through your body
- _____ Brainstem 11) found inside your spine; helps your brain by sending messages throughout your body
- _____ Spinal cord 12) one half of your brain that takes care of your creative abilities
- _____ Spine 13) small fibers in your body that send messages from your sense organs to your spinal cord
- _____ Nerves 14) the largest part of your brain that contains four lobes

Unit Six review

Fill in the blanks in the story below with the following words:

vision	nerves
ears	spinal cord
smell	taste
hearing	touch

I use my _____ to help me stay balanced. These sense organs send messages to my brain with the help of _____. Before these messages reach my brain they have to travel through my _____.

These sense organs are also used for my sense of _____. I have four more senses: _____, _____, _____ and _____.

Be certain to go over your definitions for the test!